

FIG. 1

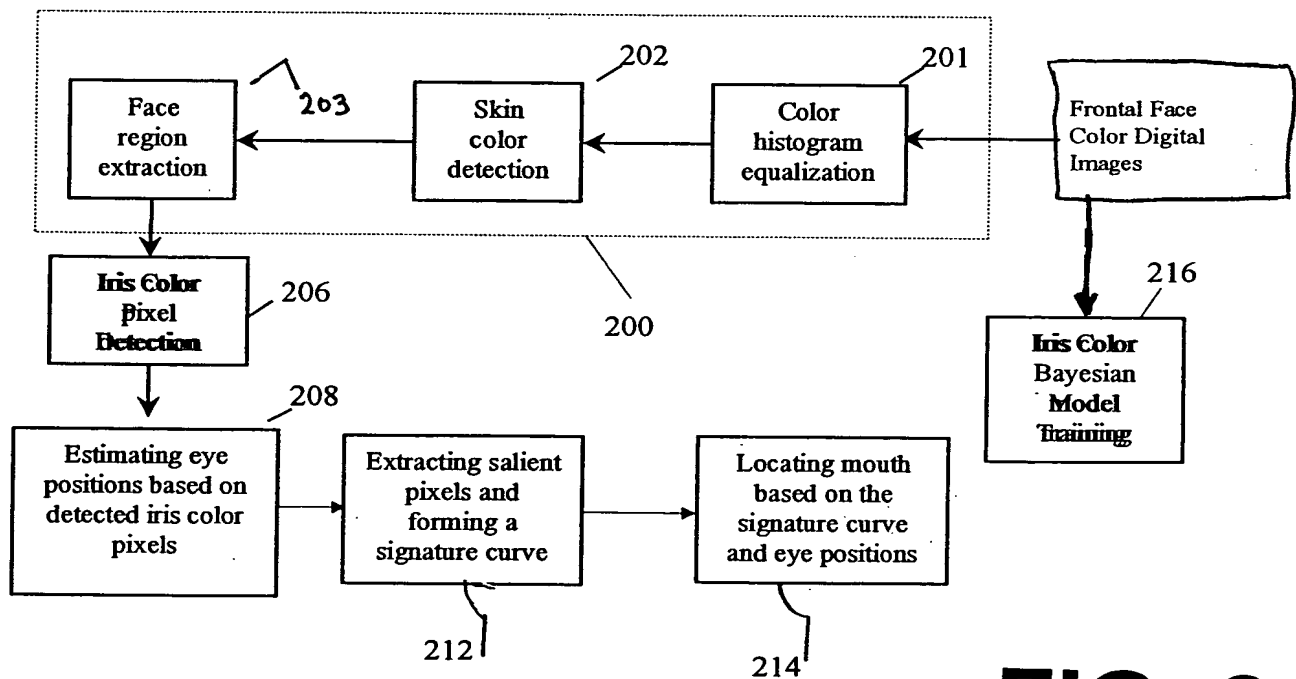
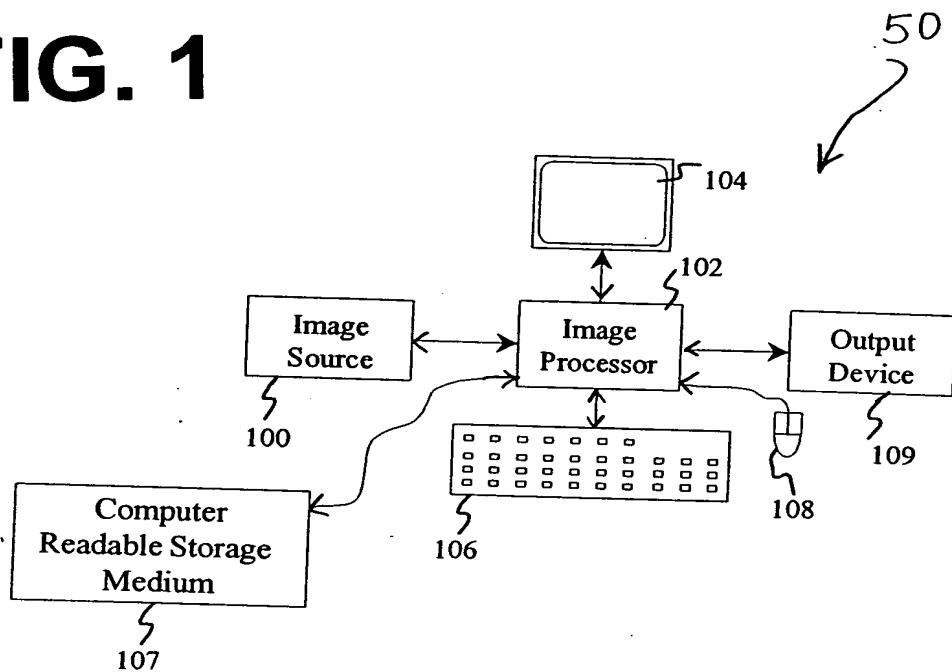


FIG. 2

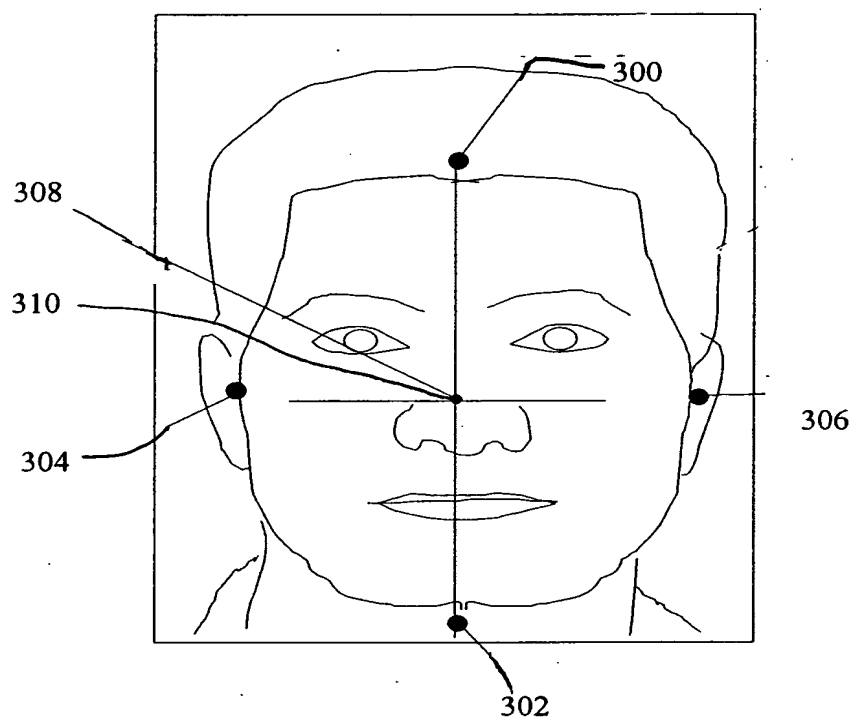


FIG. 3

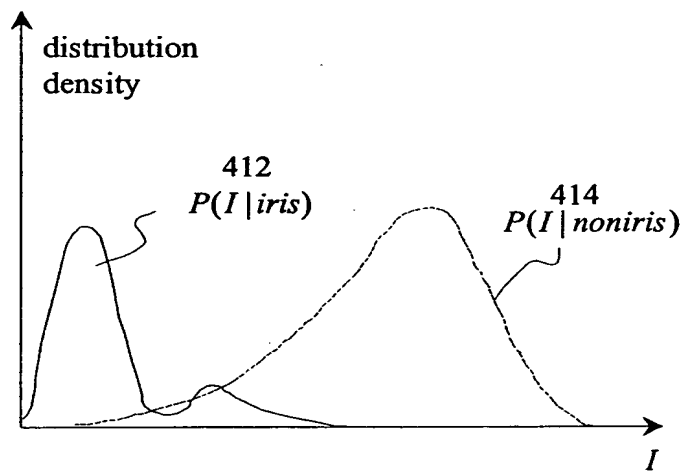


FIG. 4(a)

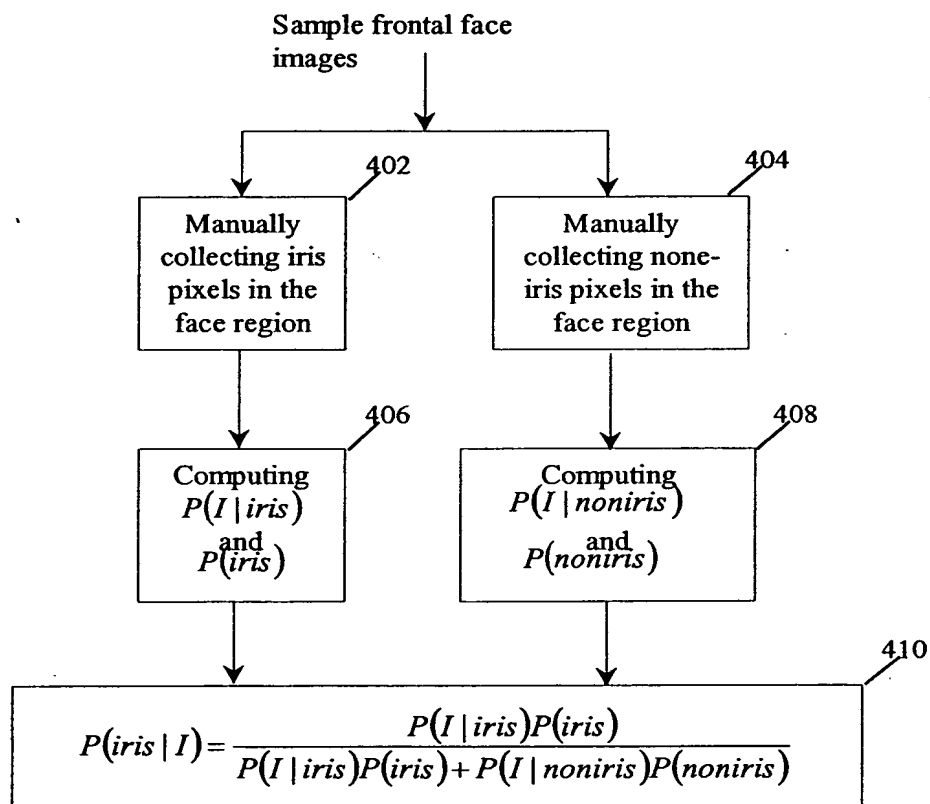


FIG. 4(b)

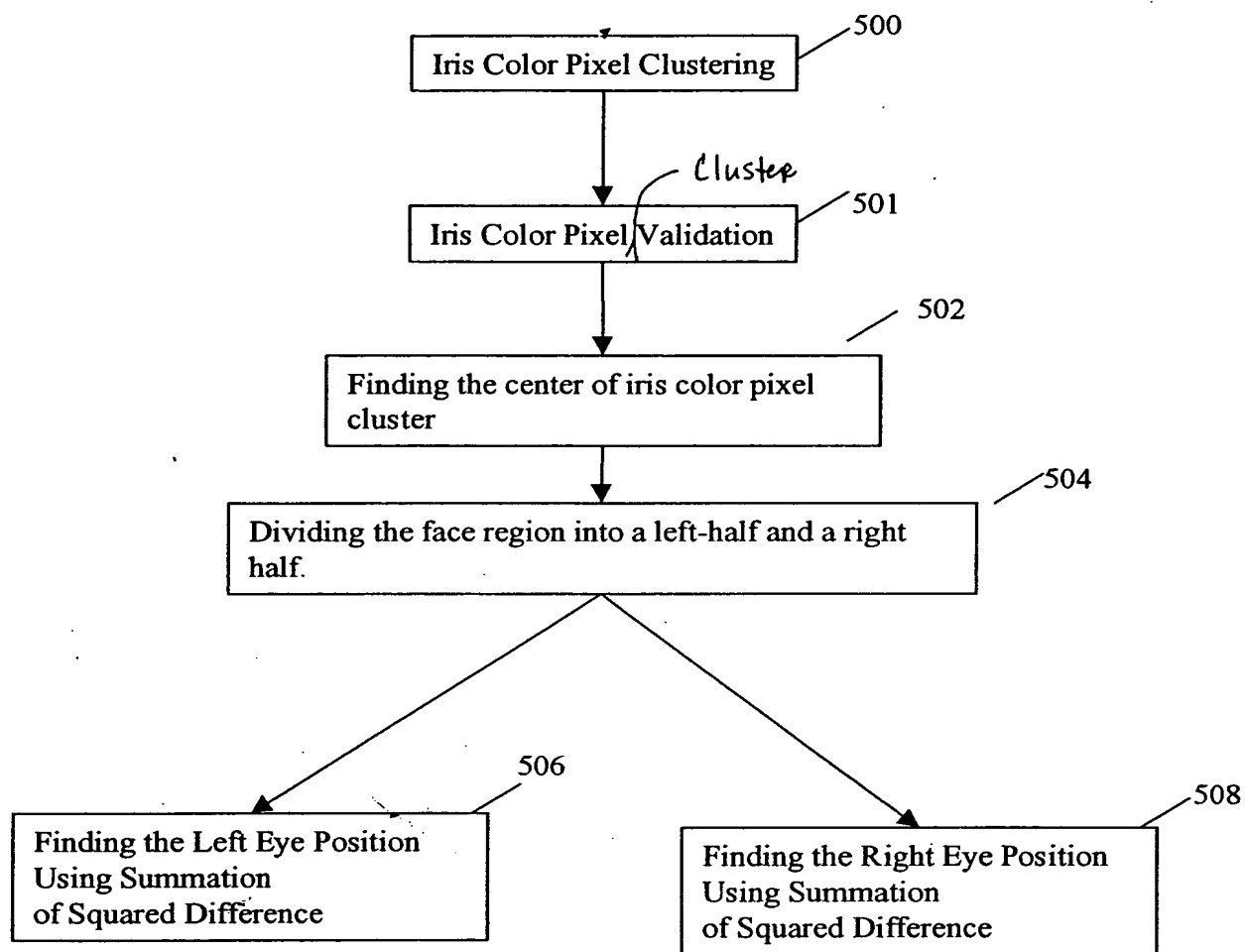


FIG. 5

FIG. 6

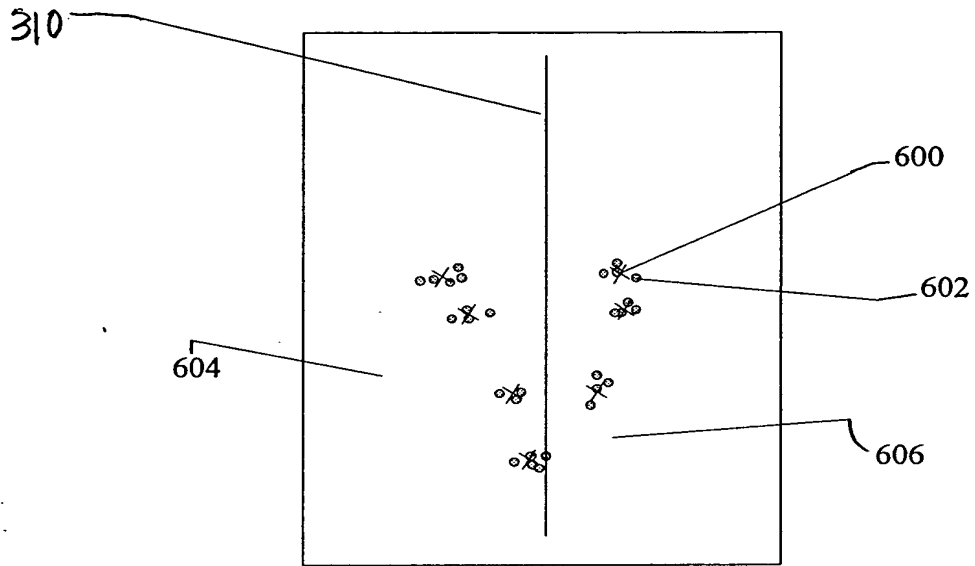


FIG. 6

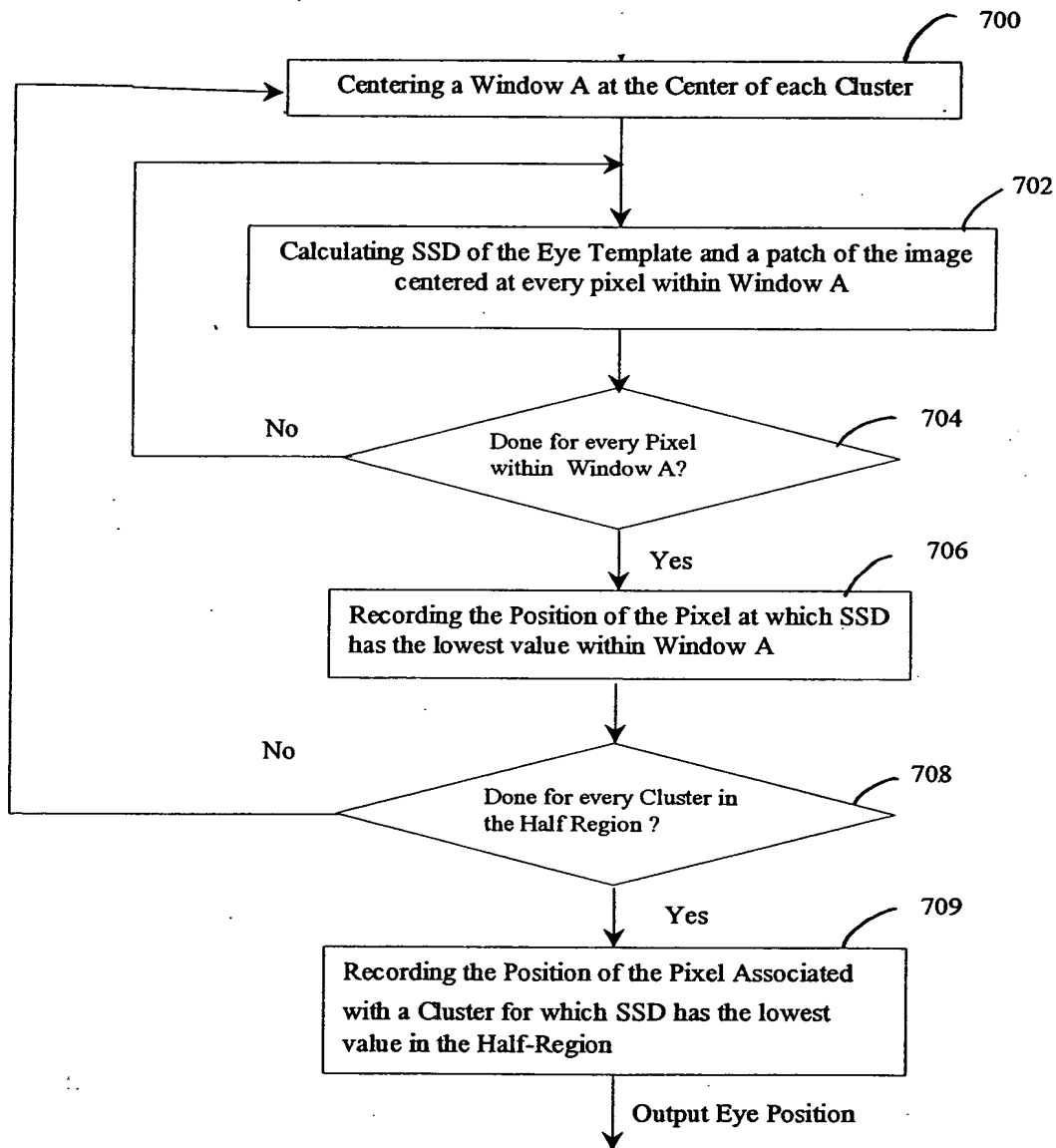


FIG. 7

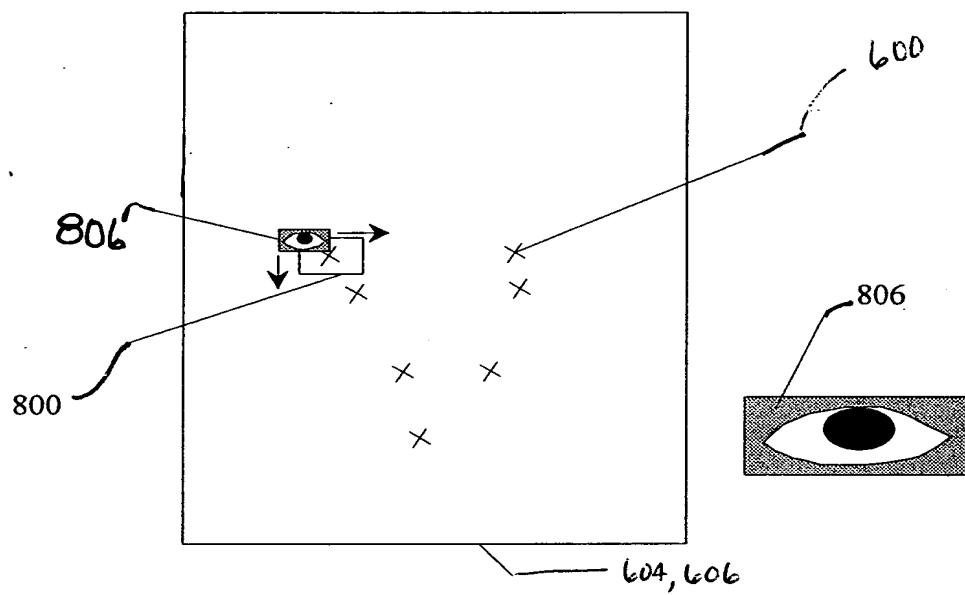


FIG. 8

Original color face image

Morphological smoothing operatoin

901

Process the face region of
the image with a high boost filter

902

Threshold high boost filtered
face region, resulting a binary
image with salient pixels

904

Project salient pixels onto the
vertical axis, obtaining a signature
curve

906

Find the peak of the signature curve
in the lower part of the face region,
mark the peak position as the mouth
coordinate in the vertical direction

908

Find the middle position between the
two eyes detected before, mark the
middle position as the mouth
coordinate in the horizontal direction

910

Validating Eye-mouth coordination

912

FIG. 9 (a)

950

$-1/9$	$-1/9$	$-1/9$
$-1/9$	H	$-1/9$
$-1/9$	$-1/9$	$-1/9$

FIG. 9(b)

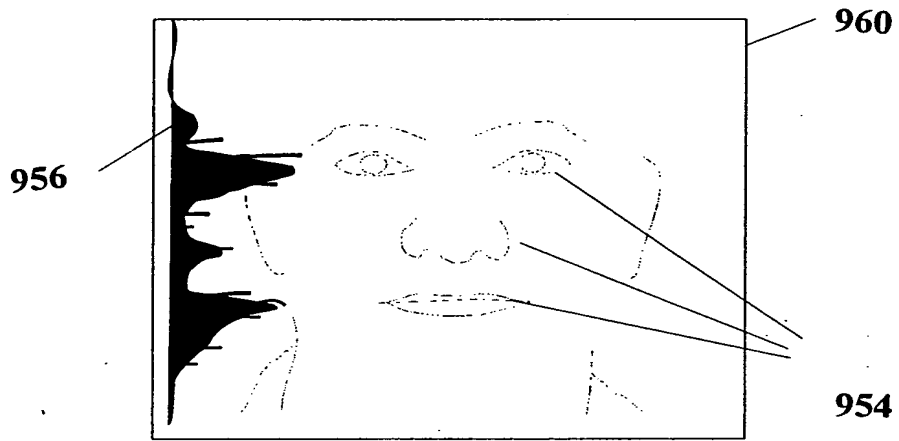


FIG. 9(c)

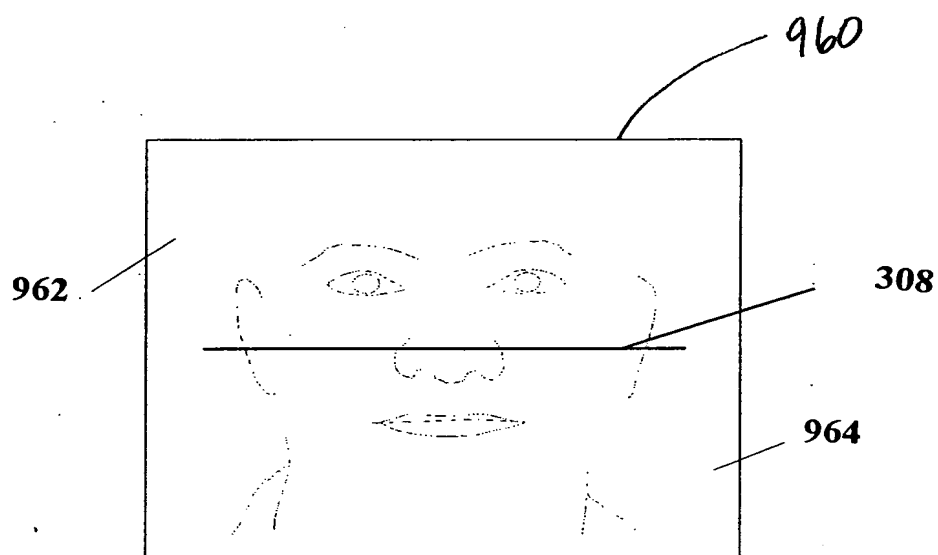


FIG. 9(d)

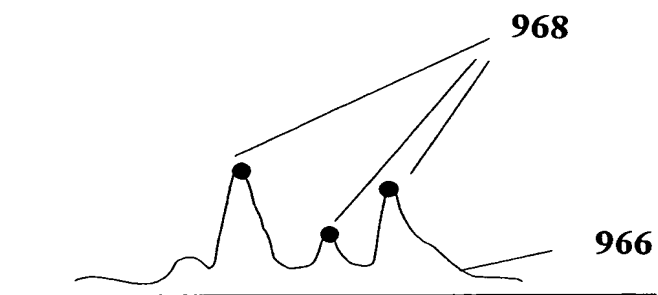


FIG. 9(e)

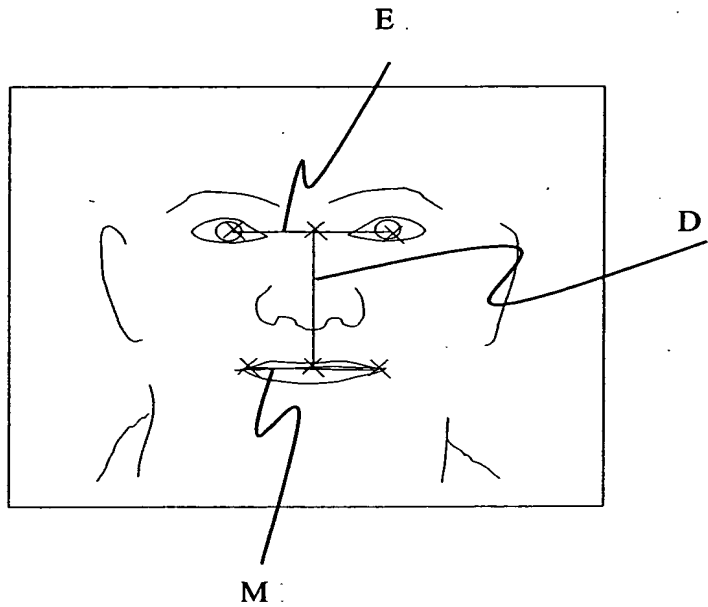


FIG. 9(f)